



**UNITED STATES DEPARTMENT OF COMMERCE
Patent and Trademark Office**

Address: COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20231

RD

3

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
-----------------	-------------	----------------------	---------------------

09/455,991 12/06/99 OHTANI

H 07977/213002

EXAMINER

020985

MM71/1121

EISH & RICHARDSON, PC

4350 LA JOLLA VILLAGE DRIVE

SUITE 500

SAN DIEGO CA 92122

DIAZ, I

ART UNIT

PAPER NUMBER

2815

DATE MAILED:

11/21/00

3

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary

Application No.

09/455,991

Applicant(s)

OHTANI ET AL.

Examiner

José R. Díaz

Art Unit

2815

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 6-12 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 6-12 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claims ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are objected to by the Examiner.
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☒ Certified copies of the priority documents have been received in Application No. 08/998,964.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. & 119(e).

Attachment(s)

- 15) ☒ Notice of References Cited (PTO-892)
- 16) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 17) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____.
- 18) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 19) ☐ Notice of Informal Patent Application (PTO-152)
- 20) ☐ Other:

DETAILED ACTION

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 6 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 6 is indefinite because it is not clear the terms "longitudinally shaped" (line 4), "post-process" (lines 9-10), and "predetermined distance" (line 10) are unclear.

Clarification is required.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 6-11 are rejected under 35 U.S.C. 102(b) as being anticipated by Zhang et al. (US Patent No. 5,529,937).

Regarding claims 6 and 9, Zhang et al. teach forming an amorphous silicon film (304) on a substrate (301) having an insulating surface (302); selectively introducing metal elements that promote the crystallization of silicon into a plurality of regions (300)

Art Unit: 2815

of said amorphous silicon film (304); and conducting a heat treatment to allow crystal to grow in parallel to said substrate from said plurality of regions into which the metal elements have been selectively introduced, wherein at least one of said regions into which the metal elements have been selectively introduced is not used for formation of an element but provided for controlling crystal growth states of other regions into which the metal elements have been selectively introduced (column 13, lines 11-22).

Regarding claim 7, Zhang et al. teach that the density of the metal is higher near leading edge, compared with crystallized areas between the leading edges and the directly doped area (column 13, lines 28-31).

Regarding claims 8 and 10, Zhang et al. teach that the metal element is Ni (column 5, lines 64-67 and column 13, lines 14-16).

Regarding claim 11, Zhang et al. teach that the introduction of the metal elements is conducted by an ion implantation method (column 11, lines 30-31).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein

were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Zhang et al. (US Patent No. 5,529,937) in view of Ohtani et al. (US Patent No. 5,643,826).

Zhang et al., as stated supra, essentially discloses the claimed invention but fails to teach coating an amorphous silicon film with a metal element. Ohtani et al. teach a step wherein the surface of an amorphous silicon film is coated with a solution containing a catalyst element. Ohtani et al. provide motivation to use such a step in that the catalyst element is controlled by precisely controlling the quantity of the catalyst (column 2, lines 49-51).

Therefore, it would have been obvious to one having ordinary skill in the art at the same time the invention was made to have modified Zhang et al. to include coating an amorphous silicon film with a metal element as taught by Ohtani et al. since such modification would result in a step wherein the catalyst element is controlled by precisely controlling the quantity of the catalyst, as described in column 2, lines 49-51 of Ohtani et al.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Zhang et al. (US Patent No. 5,403,772) teach method for manufacturing a thin film transistor using crystal silicon film.

Correspondence

Any inquiry concerning this communication or earlier communications from the examiner should be directed to José R. Díaz whose telephone number is (703) 308-6078. The examiner can normally be reached on 8:00 - 5:00 Monday through Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Eddie C. Lee can be reached on (703) 308-1690. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-7722 for regular communications and (703) 308-7722 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

JRD
November 15, 2000



EDDIE C. LEE
PRIMARY EXAMINER